HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF
EDWARD F. WILLOUGHBY, M.D.,
OF LONDON;
AND
CHARLES HARRINGTON, M.D.,
INSTRUCTOR IN MATERIA MEDICA AND HYGIENE, HARVARD MEDICAL SCHOOL.

Disinfection of Sewage with Sulphuric Acid.

Dr. M. Ivanoff (*Zeitschrift für Hygiene und Infectionskrankheiten*, Bd. xv., 1893), following Koch who showed that cholera bacilli are quickly killed in gastric juice, and Kitasato who showed that in bouillon they are killed after some hours by the addition of 0.132 per cent. of hydrochloric or 0.049 per cent. of sulphuric acid, and Stutzer who found that they are killed in a quarter of an hour in distilled water with the addition of 0.05 per cent. of sulphuric acid, interested himself in the problem of the disinfection of sewage by the same means. On account of the presence of substances which in sewage so treated would combine with and render inert a part of the acid, it was evident that stronger solutions than the above would be required. Sewage of different degrees of foulness was used. With Potsdam sewage, which was three times as foul as that of Berlin, and slightly alkaline in reaction, 0.08 per cent. of sulphuric acid was enough to kill cholera bacilli in fifteen minutes. As compared with other chemicals, sulphuric acid is second in point of cheapness, lime being first.

Action of Sozoiodol Preparations and of Tribromphenol-Bismuth on Cholera Bacilli.

Dr. Arthur Draer (*Centralblatt für Bakteriologie und Parasitenkunde*, 1893) finds, from purely bacteriological experiments with these agents, that the sozoiodol preparations, particularly the acid and the mercury compound, exert a powerful disinfectant power on cholera bacilli, the sodium, potassium, and zinc compounds in lesser degree. The tribromphenol-bismuth, even in double the amount, cannot approach the sozoiodol preparations in activity; it has but a very slight, if any, preventive influence on the development of cholera bacilli. These preparations are put forward as intestinal antiseptics. Tribromphenol-bismuth is a combination of almost equal parts of tribromphenol and oxide of bismuth. Hueppe attributes to it an almost specific action on cholera bacilli.

Cholera Bacteria and Foods.

Dr. Friedrich reports (*Arbeiten aus dem Kaiserlichen Gesundheitsamte*, Bd. viii. p. 465) the results of numerous experiments to determine the duration of life of comma bacilli in contact with various foods and drinks. On the outer surface of fresh fruits and vegetables exposed to the ordinary temperature of the room, he found that with cherries, gooseberries, white currants, apricots, greengages, plums, damsons, pears, apples, radish-cabbage, onions, and lemons, the duration was one day. With peaches, cucumbers, pumpkins, carrots, two days; spinach and oranges, six days; and cauliflower, from three to five days. On the cut surfaces under the same conditions the results were, with red and white currants and raspberries, one hour; grapes, one to two hours; cranberries, two hours; sour cherries and whortleberries, three hours; lemons and peaches, five hours; oranges, three to twenty-four hours; gooseberries, two and a half to twenty-four hours; apricots, twenty to twenty-four hours; greengages, twenty-four to forty-eight hours; plums, six hours to five days; damsons, two to seven days; pears, one to four days; apples, six hours to seven days; cucumbers, five to seven days; onions, two to four days; carrots, three to nine days; pumpkins, twelve to fourteen days; radish-cabbage, three to eight days.

With drinks the following results were obtained: Unsterilized milk, one to two days; sterilized milk, ten days; tea, one hour to four days; coffee, two to five hours; four kinds of beer, three hours; white wine, five minutes; red wine, fifteen minutes; cider, twenty minutes. In cocoa they were still living at the end of seven days.

With other foods the results were: Fresh fish kept in a refrigerator, two days; smoked herring and salt herring, one day; caviare, exposed to the ordinary temperature, one day, and in the refrigerator, four to six days; Russian caviare under the same conditions, three to six days, and eight days respectively.

MEAT PRESERVATIVES.

VENZKE and SCHORER (*Deutsche Fleischerzeitung*, 1893, xxi., Nos. 20, 21, and 24) have made analyses of thirty-eight preservatives for meat, and report their ingredients to be as follows: One proved to consist of salt, sugar, and nitrate of potassium; four of salt, sulphite and sulphate of sodium; four of sulphite and sulphate of sodium; one of salt, sugar, sulphite and sulphate of sodium; one of salt, bicarbonate and nitrate of sodium; three of salt, boric-acid, nitrate of potassium, and sulphate of sodium; one of salt, boric acid, and sulphate of sodium; one of salt, boric acid, gypsum, and suphate of sodium; six of salt and boric acid; one of salt, nitrate of potassium, sulphates of sodium and calcium, and cochineal; one of salt and borax; two of salt, borax, and nitrate of potassium; two of of salt, borax, and nitrate of sodium; one of salt, borax, sulphates of sodium and calcium, and salicylic acid; one of borax alone; five of calcium sulphite; one of molasses sugar; and two of borax and sugar.

E. POLENSKE (*Arbeiten aus dem Kaiserlichen Gesundheitsamte*, Band viii. p. 686) gives his results of further analyses of meat preservatives, seven in number: one consisted of salt, sulphate and sulphite of sodium, choride of iron, and vanillin; one was wholly acid sulphite of sodium; another was a mixture of sulphite and sulphate of sodium; a fourth consisted of salt, borax, and nitrate of potassium. A preservative obtained from American hams consisted chiefly of borax with small amounts of salt and nitrate of potassium.